

PATENT
ATTORNEY DOCKET NO.: DIVER1200-3

Applicants: Jay M. Short
Application No.: 09/753,752
Filed: January 2, 2001
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In the claims

Please amend claims 1, 3 and 5 as follows:

1. (Currently Amended) A process for identifying clones of a recombinant library produced from DNA derived from ~~at least one~~ two or more uncultivated organisms which express an enzyme with a desired characteristic, comprising:

screening in the liquid phase a library of expression clones randomly produced from DNA of ~~at least one~~ two or more uncultivated organisms, said screening being effected on expression products of said clones to thereby identify clones which express an enzyme with a desired characteristic.

2. (Previously Amended) The method of claim 1, wherein the DNA is modified or mutagenized prior to formation of the recombinant library.

3. (Currently Amended) A process of screening clones having DNA recovered from ~~an~~ uncultivated organisms to identify a protein an enzyme expressed therefrom having a specified enzymatic characteristic, which process comprises:

~~screening for a specified enzymatic characteristic a library of clones prepared by~~

(i) recovering DNA selectively from a DNA population derived from [at least one] two or more uncultivated organisms by contacting the recovered DNA in a liquid phase assay under hybridizing conditions with at least one hybridizing probe containing a full-length coding region sequence or a partial coding region sequence for an enzyme having the specified enzymatic characteristic;

(ii) transforming a host cell with the recovered DNA to produce a library of

clones; and

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(iii) screening for the specified enzymatic characteristic in an expression product prepared by expressing the library of clones to obtain expression products, which are screened for to identify the specified enzymatic characteristic.

4. (Previously Added) The method of claim 3, wherein the DNA is optionally modified or mutagenized prior to forming the library of clones.

5. (Currently Amended) The method of claim 3, wherein the specified enzymatic characteristic is selected from pH stability, temperature stability and substrate specificity of enzymatic activity.